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ABSTRACT

This report records in outline form major points concerning the emerging field of environmental scanning, noting particularly activities at the University of Minnesota. It includes definitions of environmental scanning; a description of its major components; and an outline of procedural steps to implement it. Further, it outlines the planning process at the University of Minnesota; describes the composition, as well as the activities, of an experimental environmental assessment team; and lists issues cited by the team. A four-page annotated bibliography (1967 to 1983) concludes the report. (Author/PN)

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ENVIRONMENTAL SCANNING
AT THE UNIVERSITY OF MINNESOTA
A DISCUSSION OF FORM AND SUBSTANCE

The Association for Institutional Research
in the Upper Midwest

Fall Conference
October 6-7, 1983

Ann M. Pflaum
University of Minnesota

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Abstract

This 28-page report records in outline form major points made in a talk about the emerging field of environmental scanning, noting particularly activities at the University of Minnesota. The report includes definitions of environmental scanning; a description of its major components; and an outline of procedural steps to implement it.

The report outlines the planning process at the University of Minnesota, describes the composition, as well as the activities of an experimental environmental assessment team, and lists "issues" cited by the team. An annotated bibliography concludes the report.

TWO DEFINITIONS OF ENVIRONMENTAL ANALYSIS

"Environmental analysis plays a vital role in these turbulent times as a corporation's sensing mechanism. The radar analogy immediately comes to mind. If a boat (a business or educational institution) is sailing on a sea of uncertainty, there are two essential requirements for a successful voyage. One is a star to steer by (vision by the business); the other is a radar system (environmental analysis) to pick out rocks, reefs, headlands, and clear water ahead."

Source: Ian Wilson. "The Benefits of Environmental Analysis." Chapter 9 in Kenneth J. Albert's The Strategic Management Handbook.

RELATIONSHIP OF ENVIRONMENTAL SCANNING AND ANALYSIS TO THE STRATEGIC DECISION MAKING

Two major starting points in strategic process:

-- Environmental assessment--focused externally.

-- Organizational assessment--focused internally.

"Environmental analysis of the total business environment becomes an essential and integral part of the planning process. . . . It can no longer remain . . . merely a marketing strategy; it must also encompass a technology strategy; a human resources strategy; a financial strategy, a strategy for public affairs and governmental relations and so on."

Source: Ian Wilson. In Albert, Chapter 9, p. 5.

WHY ENVIRONMENTAL SCANNING HAS EMERGED AS A NEW FIELD

1) Rapid changes of the 1970s
   -- energy crises, environmental movement, continued activity in women's movement, civil rights
   -- changes in demographic pattern--political instability in Middle East and elsewhere caught corporations by surprise

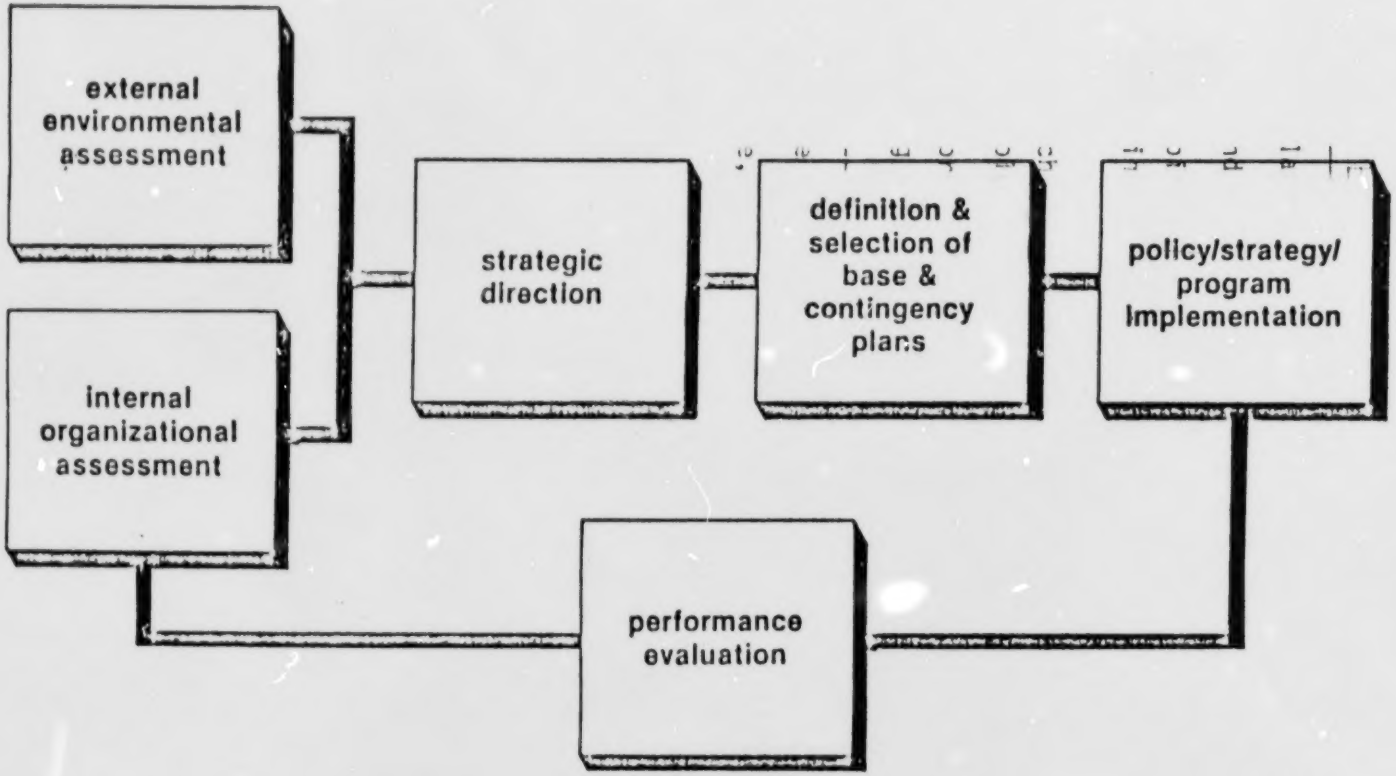
2) A gap in their information structure needed to be filled
   -- longer time horizon and broader focus than marketing analysis
   -- more humanistic than econometric models coming from their financial officers

3) Rapid changes have spawned a popular and widely read futures literature
   -- Orwell, 1984
   -- Naisbett, Megatrends
   -- Tofler, Third Wave and Future Shock, etc.

4) Professional Business Consultants
   -- SRI International (Ian Wilson)
   -- Weiner, Edrich, Brown Inc. (Trend Evaluation and Monitoring (T.E.A.M.))
   -- Policy Analysis Company (William Renfro)

5) Corporate leaders in environmental scanning
   -- Shell Canada
   -- MacDonalds
   -- Sears

the strategic process



Source: The Foresight Task Force, U.S. House of Representatives for use of the Committee on Energy and Commerce, U.S. Government Printing Office, 1983, p. 37.

SIX CHARACTERISTICS OF ENVIRONMENTAL SCANNING

1) Integrated into the planning/decision process

2) Relevant to current and emerging issues

3) Holistic rather than piecemeal
   a) includes macro, industry, competition, and organization perspectives
   b) uses SEPT approach to classify trends (Social, Economic, Political, Technological)

4) Iterative/continuous process uses both scanning ("spotting" trends) and monitoring (following closely selected trends)

5) Heuristic/exploratory--not predictive--emphasizes alternative futures not one future

6) Qualitative, intuitive, interpretive insights balance quantitative data

Ian Wilson. In Albert, Chapter 9, pp. 6-7.

PROCESS OF SCANNING

1) Literature search
   - -- by external consultants
   - -- by volunteer/internal scanners

2) Assumptions
   - -- issues have a life cycle
   - -- early sighting creates more options
   - -- Bell weather phenomena allows focus on publications/areas to spot trends
   - -- organizational planning can no longer be primarily internally based
   - -- "compression" can result in rapid development of public issues due to heightened expectations and the experience curve factor for dissenting groups

3) Major elements
   - -- scanning
   - -- monitoring
   - -- evaluation/analysis
     - key questions
     - maturity of issue
     - issue priority matrix
     - network perspective vs. hierarchical perspective to gain information
     - scenario construction
   - -- use of information in regular planning/decision making
     - planning assumptions should be linked to scanning
     - plans/programs should be altered if appropriate

Source: Ian Wilson, "The Benefits of Environmental Analysis" in Kenneth J. Albert, ed., The Strategic Management Handbook. Chapter 9.

WHY ENVIRONMENTAL SCANNING

1) To focus on tomorrow's problems--not yesterday's.

"Fifty percent of the money given away by the Philanthropic community is wasted . . . The reason for the waste . . . is that these donations are based on the past, not the future. By pouring dollars into projects that have outlined their purpose foundations may be needlessly creating new problems."

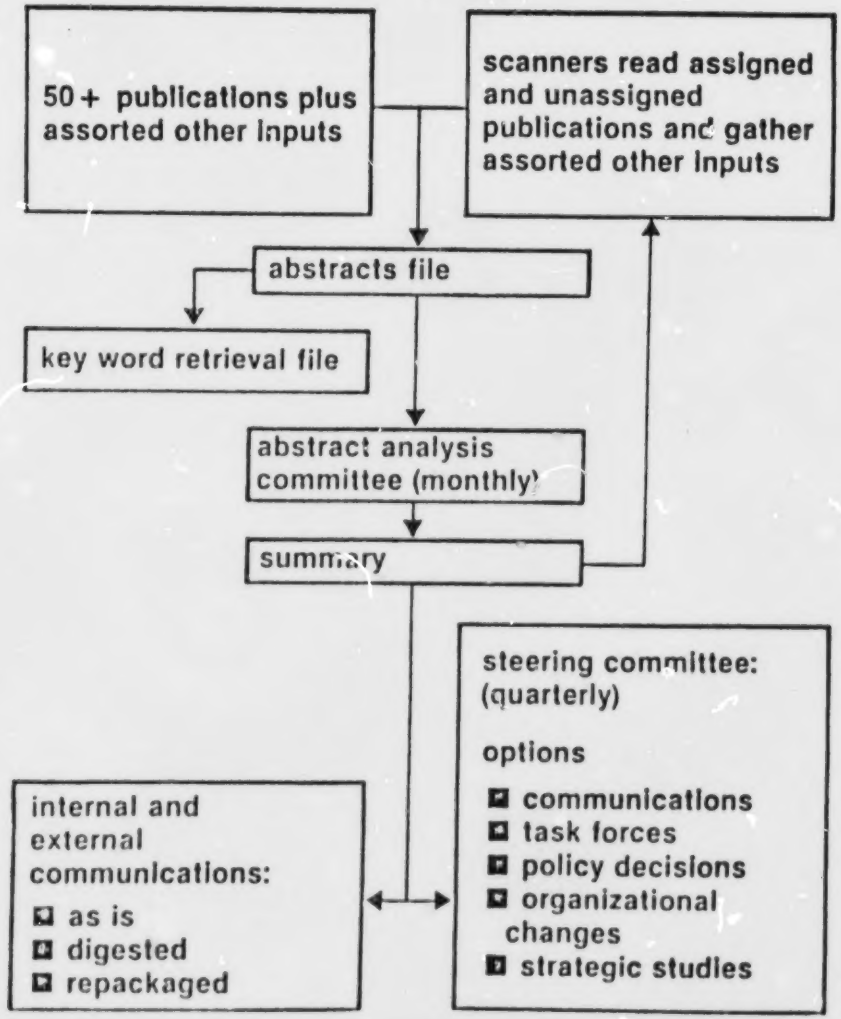
Source: Steve Nowlan, Chairman, Human Resources Network, Philadelphia. Minnesota Council on Foundations Giving Forum, September 1983. Vol. 6, No. 4, p. 1.

2) To broaden perspective of managers/administrators beyond their own immediate experience

Senior administrations--male/predominantly white, predominantly 40-50 years old, cohort

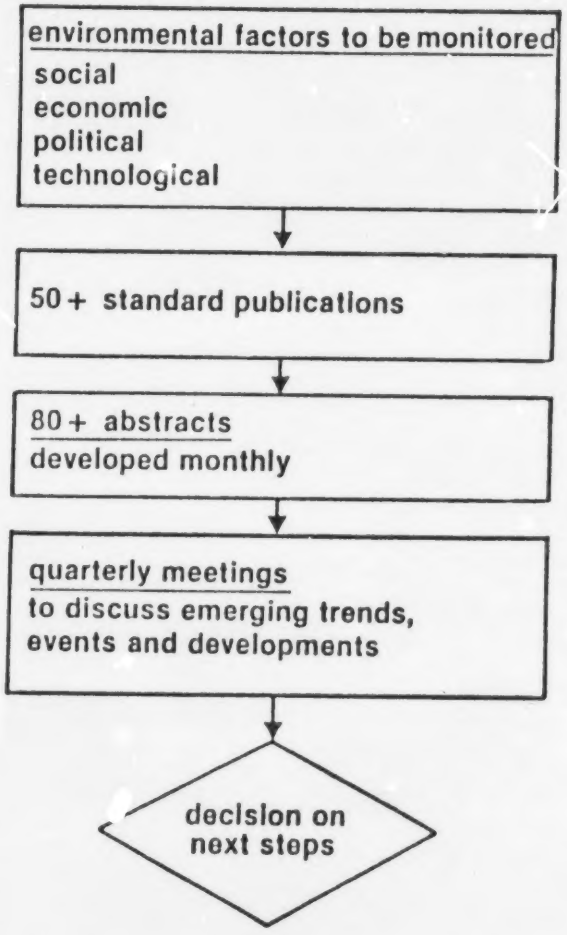
3) To provide a strategic context from which to frame
   -- strategies
   -- goals
   -- programs

scanning process



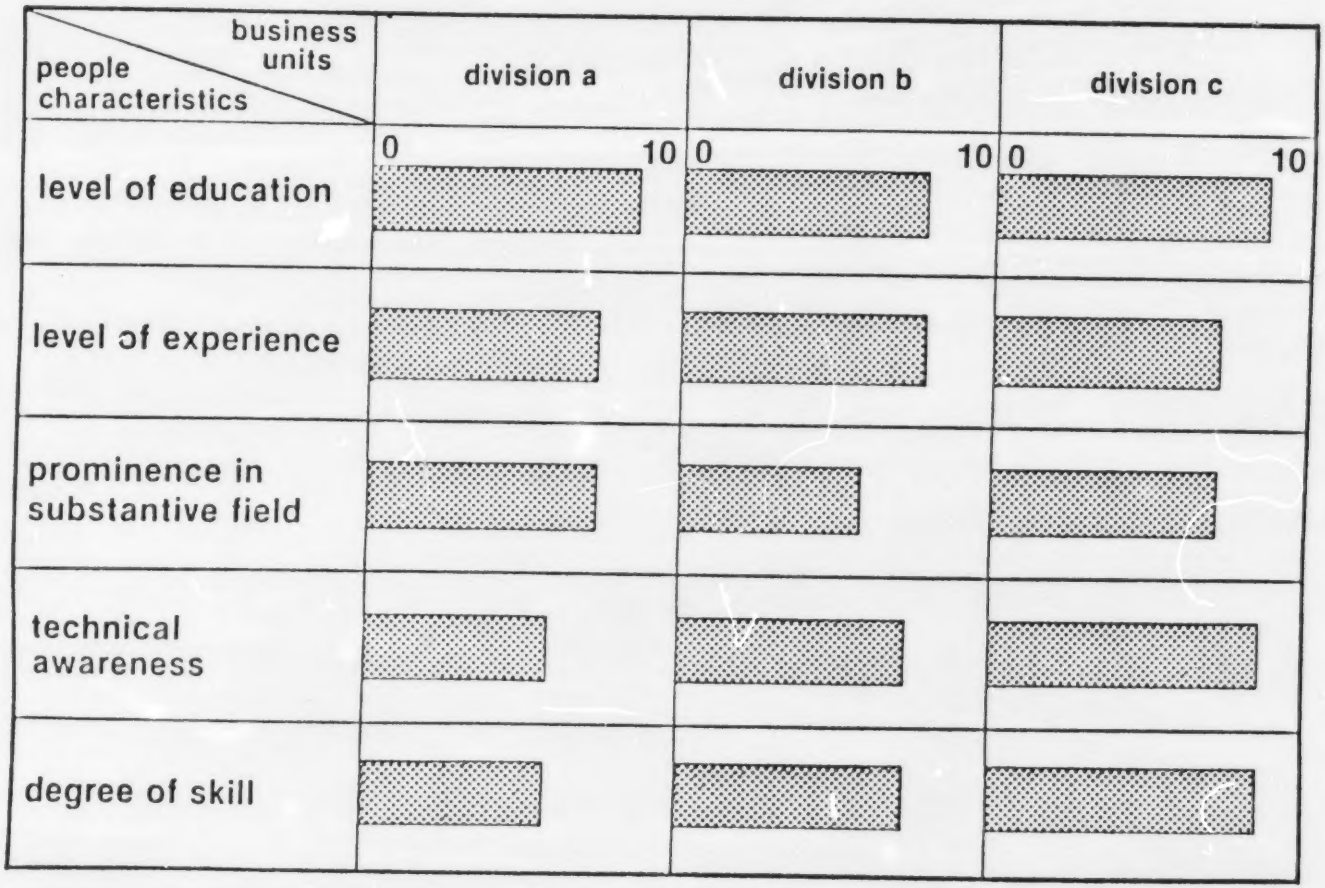
Foresight, p. 43

monitoring process



Foresight, p. 44

human resource assessment



Foresight, p. 45

KEY QUESTIONS

Criteria used to select items in scanning (item should meet one or more of the following):

-- The item represents something new . . . a new idea, a new application, a new technology, a new perspective, a novel event, etc.

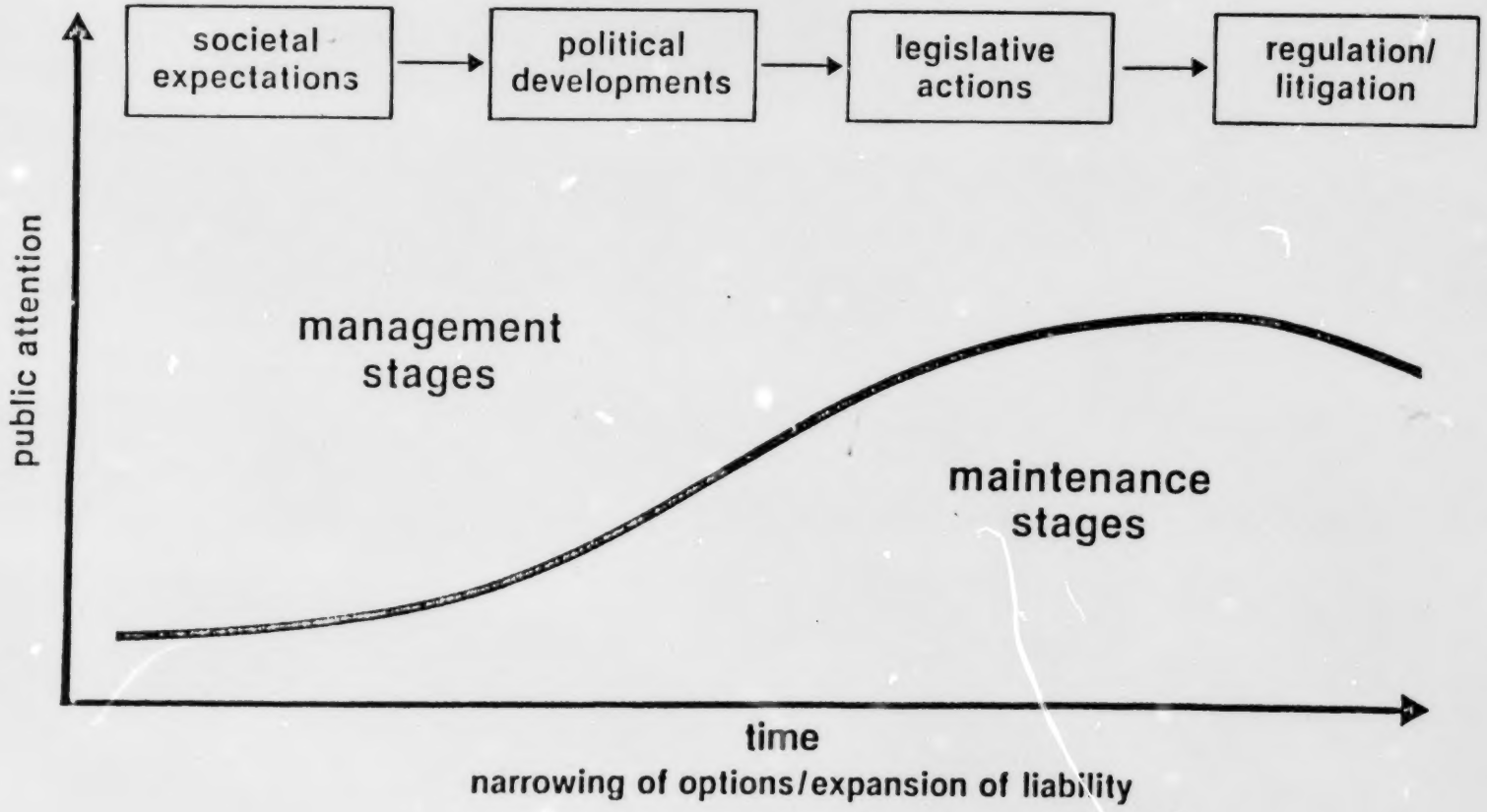
-- The item comes from a surprising source . . . a liberal comment in a conservative publication, a socio-economic analysis made by a scientist, a new technology's impact as reported in a social publication, a business man speaks out against business practices, etc.

-- The item contradicts previously acknowledged trends or conventional wisdom.

-- The item fits with several others you've seen previously to form a pattern, and that pattern is different and larger than the sum of its parts. For example, change in technology, in markets, in demographics, in minority programs, in international competition, in tax systems, and in architecture may all point to a changed idea of work and the workplace.

Source: Shellscan Newsletter, Abstract Analysis Session IV, December 1982, p. 6.

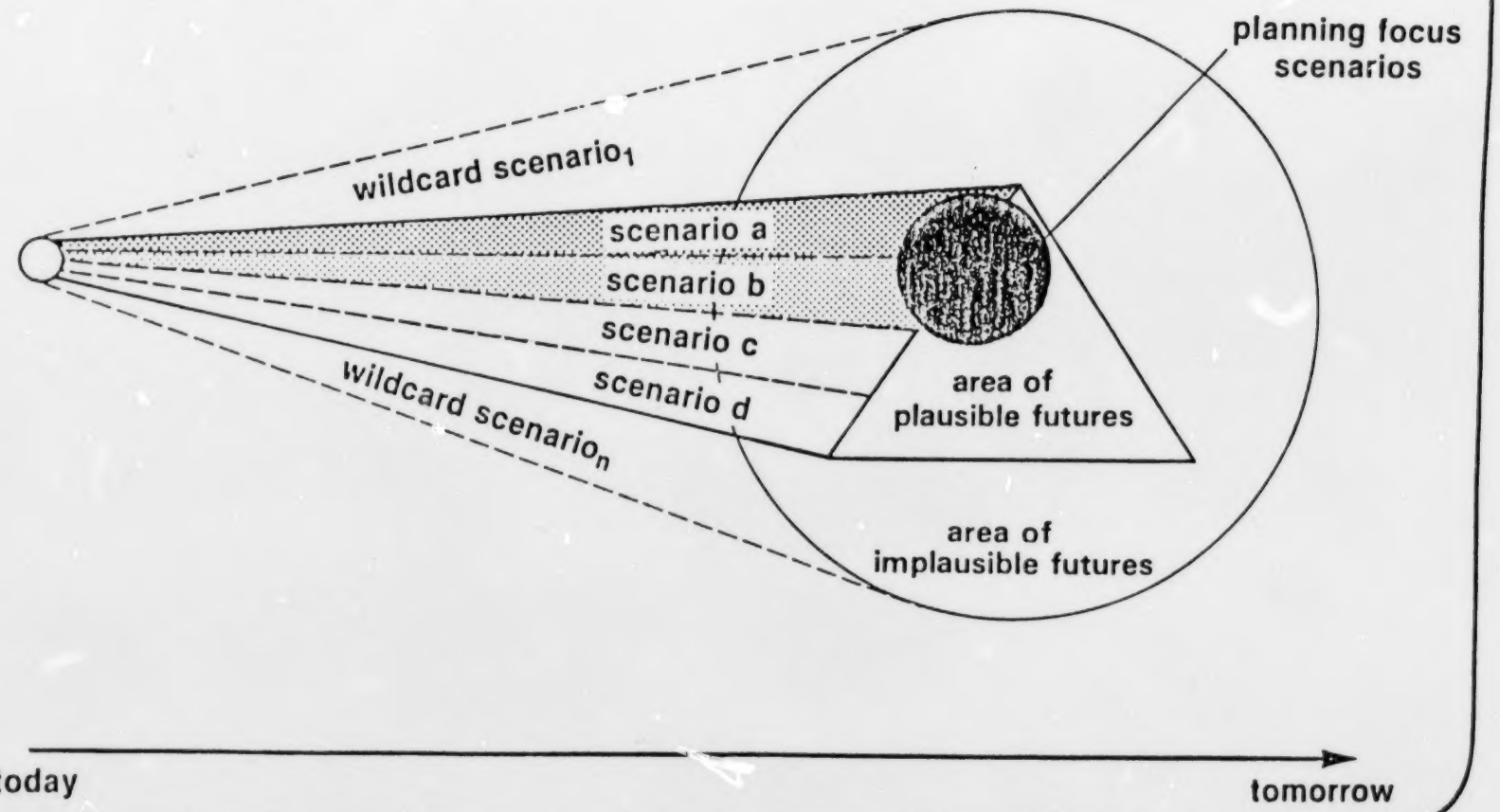
life cycle of a strategic issue



Foresight, p. 52

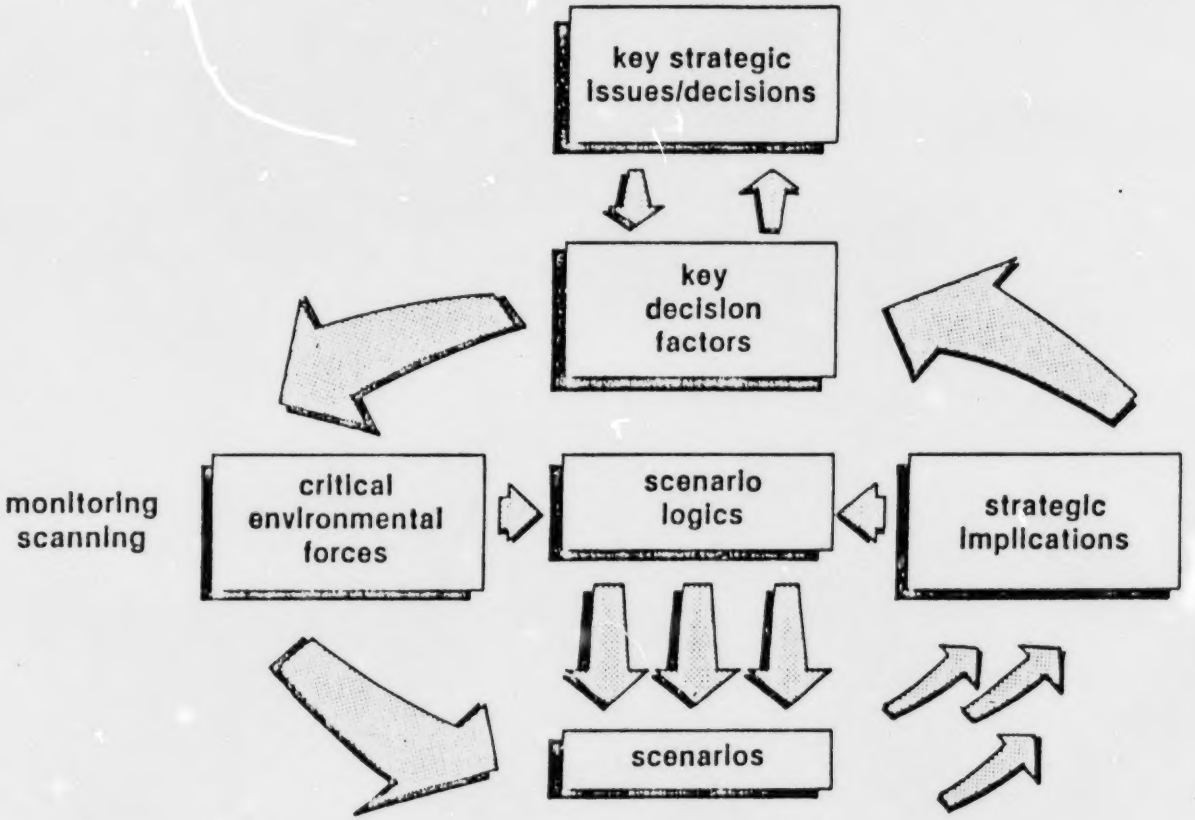
scenario construction

focus on plausible futures



Foresight, p. 38

scenario development process



Foresight, p. 39 13

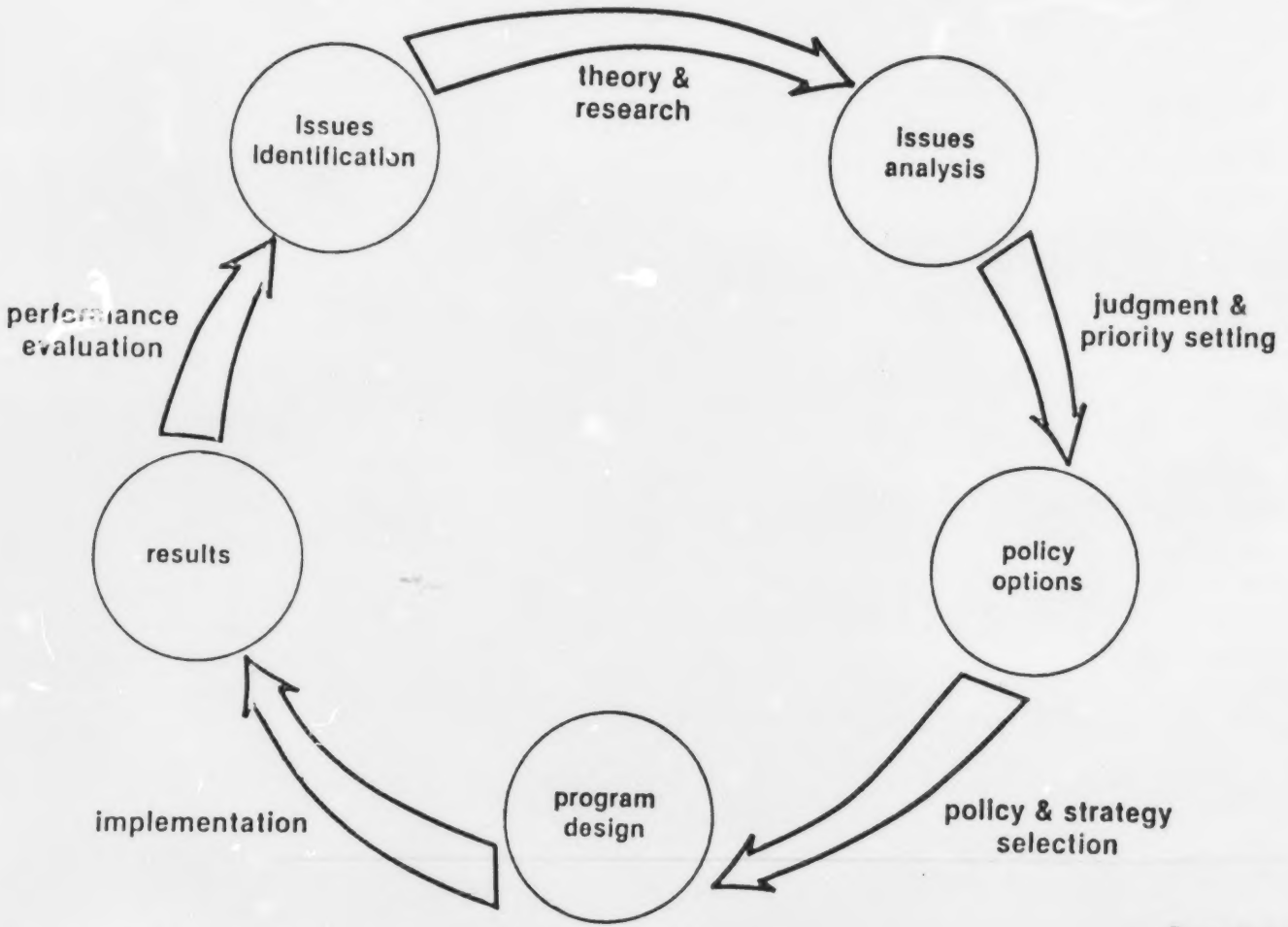
scenario construction

alternative scenarios

inter'l political/ economic conditions	major political thrusts: centralization (country-building)	major political thrusts: decentralization (region-building)
muddling along	**scenario a**	**scenario b**
restructured growth after crisis	**scenario c**	**scenario d**

Foresight, p. 40. 14

issues management process
an illustrative example*



Foresight, p.54

CAUTIONS IN TRANSLATION OF ENVIRONMENTAL SCANNING FROM THE CORPORATION TO THE ACADEMIC WORLD

1) Environmental scanning in large corporations is complemented by other forecasting mechanisms:
   -- econometric analysis
   -- values analysis
   -- marketing analysis
   -- formal planning

   Source: Handbook of Forecasting, p. 80.

2) Making optimum use of environmental scanning suggests both
   a) a formal planning process that defines/organizes mission/goals/objectives, and
   b) a formal strategic planning process that is concerned not only with goals but choice of a posture vis-a-vis other organizations.

   "Corporate strategic planning is a creative process. In contrast to other planning processes (e.g., long range planning, marketing, production, planning, and budgeting) within the firm it is not primarily concerned with time sequence and coordination of specific future actions of various parts of the organization but with the choice of a competitive posture and with the formulation of major policies for the organization as a whole and, in diversified firms, for each strategic unit."

   Source: Lasserre and Thanheiser. "Forecasting in Strategic Planning," p. 69.

3) If scanning insights are to be used, there must be sensitivity to the "culture" of the organization
   -- revisionist views on decision making
      - Cohen and March, Leadership an Ambiguity--The American College President
      - James Brian Quinn, Strategies for Change Logical Incrementalism
      - Rosabeth Moss Kanter, The Change Masters (forthcoming Fall 1983)
   -- Literature on scanning is written by consultants and academics--not by line administrators

BEES

WORKER

QUEEN

DRONE

CONSULTANT

MCCRAWFORD

Source: Forbes, October 10, 1983, cover.

PLANNING AT THE UNIVERSITY OF MINNESOTA

1) Cycle One 1979-81
   - -- Presidential leadership
   - -- Broad involvement--definition of mission, goals, objectives, priorities
   - -- external focus--reduced income anticipated because of declining enrollments and high inflation

2) Cycle Two 1981-83
   - -- Vice presidential leadership--especially, academic vice president
   - -- Themes highlighted
     - graduate education and research
     - student experience
     - computation, communication, and information
     - international education
   - -- External focus
     - reduced income related to economy of Minnesota and federal funding shifts
     - greater emphasis on relationship of the University to
       - the economy of the state
       - to other institutions of higher education

3) Environmental scanning at the University of Minnesota
   - -- 1982 commissioned internal paper on
     - life styles
     - computation
     - political social issues
   - -- 1983 spring discussions with corporations on technology and planning (Medtronic, Cargill, Honeywell, 3M)
   - -- 1983 summer experimental scanning group

ENVIRONMENTAL ASSESSMENT TEAM

1) Membership--voluntary scanners. Offices represented:
   - -- Attorney
   - -- Management Planning and Information
   - -- Academic Affairs
   - -- University Relations
   - -- Center for Educational Development
   - -- Hubert H. Humphrey Institute

   Membership
   - -- Old/new
   - -- Age diversity
   - -- Sex/race diversity
   - -- Role diversity

2) Process decisions
   - -- Balance needed between open and defined focus--allow for wild card but select issues to follow
   - -- Issues sought would be those not already receiving adequate attention
   - -- Issues sought from broad spectrum of external possibilities
   - -- Issues sought along range of issue cycle--feint stirrings to mature and immediate

LIST OF POSSIBLE ISSUES TO DATE

-- Electronic Publishing
-- Challenges to Traditional Publishing
-- The Role of Intellectuals in Society
-- Overeducated/Underemployed Graduates
-- Eroding Economic Middle
-- Job Openings vs. Job Demand
-- Teenage Behaviors and Values
-- The Nature of Learning in the Information Society
-- Competition within Postsecondary Education
-- Productivity and the Workforce
-- Delivery of Human Services
-- Public/Private Cooperation
-- Changing Managerial Philosophies
-- Animal Rights
-- Quality vs. Equality
-- Status of Faculty
-- Student Relationships and Expectations
-- Responsibility of Individuals vis-a-vis Institutions
-- Aging Workforce
-- Cost of Education
-- Third Generation College Students
-- Learning Styles
-- Marketing
-- Population Shifts
-- Recruitment of Students--Growing Inflexibility of Institutions
-- Shift in Cultures: East to West--West to East

CURRENT READING PATTERNS GROUPED BY SUBJECT

General Publications

Commentary (MP)
Minneapolis Star and Tribune (All)
Minnesota Daily (All)
National Journal (TD)
National Review (MP)
New Republic (RBH, TD)
Newsweek (LP)
New York Times
St. Paul Pioneer Press (LP)
Spokesman (LP)
Time (LP, TD)
Twin Cities Courier (LP)
USA Today (AMP)
Washington Post (JH)
Washington Spectator (SS)

Business/Economic/Other Professional Publications

Broadcasting (LP)
Business Week (AMP, LP)
Citizens League News (SS)
Columbia Journalism Review (LP)
Corporate Report (CA,AMP)
Forbes (CA)
Fortune (AMP)
Harvard Business Review (AMP)
Journal of American Medical Assoc. (LP)
National Journal (TD)
Public Administration Review (TD)
Sloan Management Review (AMP)
Wall Street Journal (AMP, CA)

Education

American Assoc. of Higher Education Bulletin (SS)
American Educational Research Journal (SS)
Chamge Magazine (AMP, LP, RBH, CA, MP)
Chronicle of Higher Education (AMP, RBH, LP, TD)
Credential News (SS)
Journal of Higher Education (RBH, AMP, SS)
Review Educational Research (SS)
Stanford Alumni Magazine (JH)
Telescan (SS)

Futurism/Planning

American Demographics (TD)
Futures (RBH, TD)
Future Tense (SS)
Futurist (RBH, TC)
Long Range Planning (TD)
Planning Review (TD)
Technology, Forecasts, and Social Change (TD)

Science/Technology

Audubon (RBH)
Brain Mind (SS)
Broadcasting (LP)
Discover (LP)
High Technology (LP)
Omni (LP)
Popular Computing (LP, JH)
Psychology Today (SS)
Science (LP)
Science 83 (LP)
Science Digest (LP)
Scientific American (LP)
Smithsonian (LP, RBH)
Technology Illustrated (LP)

Social Science/Literature/Arts

Atlantic (MP)
Bread for the World (SS)
Daedalus (AMP)
Esquire (RH)
Food Monitor (SS)
Harpers (MP)
Leading Aid Bulletin (SS)
Minnesota Monthly (RBH)
New York Review of Books (LP)
Prevention (SS)

UNIVERSITY OF MINNESOTA ENVIRONMENTAL SCANNING

1) Issues summaries:
   - -- issue is defined
   - -- sources are identified
   - -- place of issue in issue cycle noted
   - -- priority/impact assessment made
   - -- institutional reponse suggested

2) Process questions:
   - -- how much time should be spent defining issue?
   - -- how do you develop information/data to define the issue?
   - -- do you gather extensive background before issue is considered "defined?"
   - -- do you create an issue by scanning for it?
   - -- what should posture of scanners be vis-a-vis ethical/social dimensions of issues?
   - -- how will success or failure of the project be defined?
   - -- are gaps in scanning? (SEPT tool helpful)
   - -- are issues of varying maturity/immediacy?
   - -- are opportunities identified as well as threats?

SAMPLE SUMMARIES

-- First cut summaries

- Quality vs. Equality
- Wandering Academics

-- More developed summaries:

- Private/Public Partnership
- Animal Rights

-- The coming scientific society

QUALITY vs. EQUALITY

As with all seeming dichotomies, this one can becloud more than enlighten. But awareness of this tension is helpful in understanding educational change and the current education debate. At the risk of overstatement, the period from the mid-1960s to the near present was characterized by an emphasis on ideals such as equity, fairness and openness; and educational practices such as open admissions and financial aid based primarily on financial need rather than scholarly performance. The list can be expanded. The more recent interest in tightening entrance requirements, restoring core curricula, requiring prospective teachers to pass stiffer certification examinations, demanding more academically from college athletes, and other reforms (in both higher education and K-12) signify not necessarily a retreat from equality but an interest in recapturing quality.

WANDERING ACADEMICS

Given the assumption there is an increasing number and percentage of academically-trained people who are unsuccessful in finding relatively stable academically-based positions, what are the implications of this phenomenon? The focus here is on individuals with terminal degrees; the problem of un- or underemployed baccalaureate recipients is addressed under the heading of "The Eroding Economic Middle." What will be the effects on graduate enrollments of the continuing inability of Ph.D. recipients, especially in the humanities and social sciences, to secure positions congruent with their training? What effects will this problem have on curricular development? What effects will the short-term, non-tenure track appointments of such academics have on departmental, collegiate, and institutional vitality?

PUBLIC/PRIVATE PARTNERSHIPS

The issue for the University vis-a-vis public/private partnerships occurs most immediately in the question of whether or not to proceed with such partnerships in the development of scientific research projects, particularly in areas such as biotechnology and information science and communications. Similar issues arise in the "social sciences" as Minnesotans begin to look seriously at the economy, social structure (including education), and at the political solutions to our problem.

Partnerships in science and technology areas raise a number of significant issues:

1. Should a university contract undertake long-term sponsored research for a particular firm?
2. Should a university invest in new ventures started by its own professors?
3. Can a university assist in the transfer of technology and scientific knowledge by establishing or amending its consulting policies?
4. What patent policies should a university have?
5. Should a university become a partner with industry in a research consortium?
6. Are there constraints on public/private partnerships for a public institution which might not occur for private colleges or universities?

Harvard has chosen to participate in a long-term sponsored research relationship with Monstano ($23 million); MIT has agreed to a long-term relationships with Exxon. Consortia are developed for joint industry research and involve a processing research institute at Carnegie-Mellon; a polymer processing program at MIT; integrated systems research at Stanford. More recently, the establishment of a joint research project aimed at the development of supercomputers adjacent to the University of Texas at Austin represents yet another example of the consortia approach to research.

An obviously crucial issue for the University of Minnesota is to define its own posture vis-a-vis cooperative relationships with industry in the area of science and technology.

Public/private partnerships involve far more than scientific relationships. Currently University of Minnesota planning has begun to look at ways in which the University can assist the economy and social and aesthetic life of the state. Analogues to the Agricultural Experiment Station/Extension traditions of outreach and service are being explored. The manageable size and scale of Minnesota's political/social economy coupled with the traditions of community involvement, pragmatism, and populism suggests that the prospects for University/state copperation could be quite significant. Initiatives such as MNTECH, Wellspring, the Business Partnership can become stepping stones to specific accomplishments.

A particularly important issue for the University is to recognize that the climate is hospitable to public/private partnerships. The University must develop its own position on the cluster of issues arising from scientific and technology partnership and must similarly assess its own strengths so that it can play an appropriate role in the partnerships arising in the social, economic, and artistic areas.

THE COMING SCIENTIFIC SOCIETY

According to Michel Poniatowski, a member of the European parliament, . . . we are witnessing an erosion of ideologies, economic theories and traditional culture . . . because all our assumptions, theories and religions come from the 19th century . . . an industrial period that is approaching its end and is being replaced by a scientific age with a totally different kind of thinking.

Strategic significance:

-- The spawning of an agricultural revolution as third world countries utilize Western technology such as biotechnology to ensure survival and provide a future for the third world.

-- Societies and countries refusing to adapt to technology will become increasingly disaffected.

-- A re-evaluation of western models . . . capitalism . . . industrialization . . . as they are applied to third world countries.

-- Extensive use of artificial intelligence which mimics human experts in problem solving and application of strategies could fundamentally change the nature of many professions.

-- Developing and maintaining the competitive edge may depend increasingly on the innovative management of staff . . . particularly those engaged in research and the application of technologies.

-- Government regulation of scientific and technical information and practices may increase in the interests of national security and competitive advantage . . . collaborative research and the exchange expertise and information may be curtailed for many companies.

Source: Shellscan Newsletter, Abstract Analysis Session IV, December 19832, p. 4

ACTION OPTIONS

1) Do nothing further (issue may be low probability/low impact)

2) Assign responsibility to someone to follow the issue and report back annually or as needed

3) Assign someone to follow the issue and give them authority to implement suggested responses

4) Assign someone to follow issue and begin to involve key personnel in understanding issue/probably institutional posture defined

5) Assign additional research on issue

CONCLUDING OBSERVATIONS

1) Scanning fits well in an academic setting

2) Volunteers seem interested and good at their task

3) Integration of the information into the ongoing decision process is important

SELECTED REFERENCES

Aguilar, Francis Joseph. Scanning the Business Environment. New York: MacMillan (1967).

The classic early work on environmental scanning.

Ashley, William C. "Issues Management--New Tool for New Times." Wheaton, Illinois: Ashley and Associates (1983).

William Ashley was formerly a consultant with Sears and MacDonalds; he is one of the premier persons in the field of environmental scanning and issues management.

Brown, George H. "The Impact of Demographic Societal Changes on U.S. Business." In Planning Review (May 1983):32-39.

This short essay by the senior research fellow and advisor to the president of the Conference Board provides a sample of the kind of issues analysis which is prepared for the corporate world. Twelve major societal changes are noted in the essay. They include zero population growth; reversal and the downward trend in energy costs; advent of double digit price inflation; closing the environmental frontier; achievement of a high school education or more for half the adult population; participation in the labor force by a majority of married women; advent of near universal private and public automatic temperature control; advent of mass affluence; rise in life expectancy; rise in electronic communication; advent of mass private transportation; and birth rate distortions--1930-45 and 1945-60. (p. 35)

Dreyer, Herbert E., and Randall L. Scheel. Recognizing and Using Trends: A Personal Guidebook. Portland, Oregon: Strategic Moves (1983).

This source provides a sample of the kind of environmental scanning guidance provided by professional consultants.

Fleming, John E. "Linking Public Affairs with Corporate Planning." In California Management Review (Winter 1980) Vol. 23, No. 2:35-43.

Key point is that the crucial link between public affairs and corporate planning must occur at the divisional level (as opposed to the staff level) if implementation is to proceed successfully. Successful links depend on: top management involvement, issues scanning and communication expertise, corporate planning, and division manager motivation. (p. 41)

Foresight Task Force. Foresight in the Private Sector: How Can Government Use It? Prepared for use by the Committee on Energy and Commerce, U.S. House of Representatives. Washington: U.S. Government Printing House (January 1983).

A helpful introduction to scanning prepared by representatives of private corporations.

Gluck, Frederick W., Steven P. Kaufman, and A. Steven Walleck. "Strategic Management for Competitive Advantage." In Harvard Business Review (July/August 1980):155-161.

Chart (on page 157) showing the formal phases in the evolution of strategic planning makes the point that an organization thoroughly adept at strategic planning can not only think strategically, but can, in part, create its future.

Hegarty, W. Harvey. "Strategic Planning in the 1980s--Coping with Complex External Forces." In Planning Review (September 1981):8-41.

This author suggests that corporations make use of academic contacts in their environmental scanning.

Kantrow, Alan M. "Keeping Informed." In Harvard Business Review (July/August 1980):7-18.

This article discusses the importance of a sound relationship between technological innovation, market need, and technical possibility. The article notes that current research is underway on the relevance of contingency theory to the universal technological innovation, but that the application of the theory to this context is still not complete.

King, William R. "Using Strategic Analysis." In Long Range Planning, Vol. 15, No. 4 (1982):45-49.

Professor King (business administration, University of Pittsburgh) suggests four ways of dealing with strategic issues: assigning them to an expert, formal modeling, study by a staff group, and use of a particular approach called "strategic issue analysis" (SIA). The major steps in the process include identification of the strategic issue, development of a formal statement of the issue, development of a preliminary issue model, critique and revision of the model, data gathering, and use of the model in the planning process. (p. 47)

Kirschling, Wayne R., and Vaughn E. Huckfeldt. "Projecting Alternative Futures." In Improving Academic Management: A Handbook of Planning and Institutional Research, Paul Jademus and Marvin Peterson (eds.) San Francisco: Jossey-Bass (1980):200-215.

This is one of the first applications of scenario development to academic planning.

Klein, Harold E., and William H. Newman. "How to Integrate New Environmental Forces into Strategic Planning." In Management Review (July 1980):41-49.

This article offers an alternative approach to the SEPT issues categorization developed by Ian Wilson from SRI. The approach proposed here is called Systematic Probing and Identification of Relevant Environment (SPIRE).

Ann M. Pflaum

Lasseire, Philippe and Heinz Thanheiser. "Foresight in Strategic Planning." In The Handbook of Forecasting: A Manager's Guide, Spyros Makridakis and Steven C. Wheelright (eds.). New York: John Wiley and Sons (1980):69-82.

This essay from an excellent handbook describing a whole array of forecasting methodologies provides a useful distinction between planning and strategic planning. It makes the point that planning is concerned with the timetable of activities whereas strategic planning is concerned with the competitive posture of the organization. (p. 69)

Mandel. Thomas F. "Future Scenarios and their Uses in Corporate Strategy." In The Strategic Management Handbook, Kenneth J. Albert (ed.). New York: McGraw-Hill (1983):Chapter 10.

Thomas Mandel, senior strategic analyst of SRI, provides an overview of an eight-step process used in the SRI futures program: analyzing decisions; identifying key decision factors; identifying key societal factors; analyzing key forces separately; selecting scenario logics; elaborating scenarios; identifying and analyzing implications of key decision factors; and incorporating scenario insights into strategic decisions.

Minnesota, University of. "Strategic Assessment of Selected Trends." (June 18, 1982) unpublished manuscript.

Essays of University of Minnesota administrators covering topics such as political climate, technology trends, the relationship of demographic variables in planning, and social and lifestyle trends.

Nanus, Bert. "Quest--Quick Environmental Scanning Technique." Los Angeles: Center for Futures Research (August 1979).

Professor Nanus of the Graduate School of Business Administration at the University of Southern California offers an easy-to-use adaptation of the more formal scanning processes developed by corporations. It is based on the premise that organization insiders can reasonably and profitably pursue the steps in environmental scanning. The key steps involved are: the appointment of a committee, holding a planning session, developing scenarios, and developing statements of strategic options.

Nanus, Bert. "Quest--Quick Environmental Scanning Technique." In Long Range Planning, Vol. 15, No. 2 (1982):39-45.

This article is similar to the one noted above. This article describes the "planning session" quite fully. It is to define the business, measure performance, identify critical events, take advantage of cross-impact analysis, and pursue scenario development.

Naylor, Michael E. "Planning for Uncertainty--Scenario-Strategy Matrix." In The Strategic Management Handbook, Kenneth J. Albert (ed.). New York: McGraw-Hill (1983):Chapter 22.

This is another well-informed essay on scenario development.

Ann M. Pflaum

Quinn, James B. Strategies for Change: Logical Incrementalism. Georgetown, Ontario: Richard D. Irwin (1980).

Quinn's book is an important look at why formal planning processes have not been as successful as their authors had hoped. Recent work has concentrated on how large organizations can retain creativity.

Renfro, William L. "Managing the Issues of the 1980s." In the Futurist (August 1982):61-66.

Renfro is a leading futurist and with James Morrison will be publishing a book on the application of environmental scanning to the academic world (Jossey-Bass, anticipated 1983). The activity of environmental scanning has created a subfield in corporate public relations called "issues management." The article in this book describes the scanning process and alludes to the handling of issues.

Shellscan Newsletter. Abstract Analysis Session IV, December 1982.

Useful for the insights into issue abstracts developed by Shell.

Thomas, Philip S. "The Environmental Scanning--State of the Art." In Long Range Planning, Vol. 13 (February 1980):20-24.

This article concludes that an earlier article by Fahey and King which was not optimistic about the process for environmental planning needs some qualification. The article provides an excellent perspective on the purposes of scanning: the provision of a mind-stretching or educational experience for management; the development of broad strategies and long-term policies; the development of action plans and operating procedures; and the development of a frame of reference for the annual budget. The article describes planning in several major companies.

Thomas, Raymond. "Corporate Strategic Planning in the University." In Long Range Planning, Vol. 13 (October 1980):70-78.

This author from the University of Bath (in England) is moderately optimistic about the future of strategic planning in universities.

Wilson, Ian. "The Benefits of Environmental Analysis." In The Strategic Management Handbook, Kenneth J. Albert (ed.). New York: McGraw-Hill (1983):Chapter 9.

Wilson, senior management consultant for SRI, is an important author in the field in environmental scanning and analysis. This essay provides a first-rate overview of the field.

Wilson, Ian. "Integrating Public Affairs into Strategic Planning." Menlo Park, California: SRI International (August 1982).

This essay is more discursive than the one above and discusses the importance of actually using environmental analysis in strategic planning.

Ann M. Pflaum

Zentner, Rene D. "Issues and their Management." A paper presented at the program Critical Issues Management (June 14, 1981) at the Maine Maritime Academy, Castine, Maine.

This paper represents another fair discussion of the field of environmental scanning and issues management.